

SMITHCO

Wayne, Pennsylvania 19087

OPERATOR'S MANUAL

BIG VAC

Models 72-000-A

Starting Serial # 72001

May, 2001

SMITHCO PRODUCT SUPPORT

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Hwy SS and Poplar Avenue, Cameron WI 54822

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Thank you for purchasing a **SMITHCO** product.

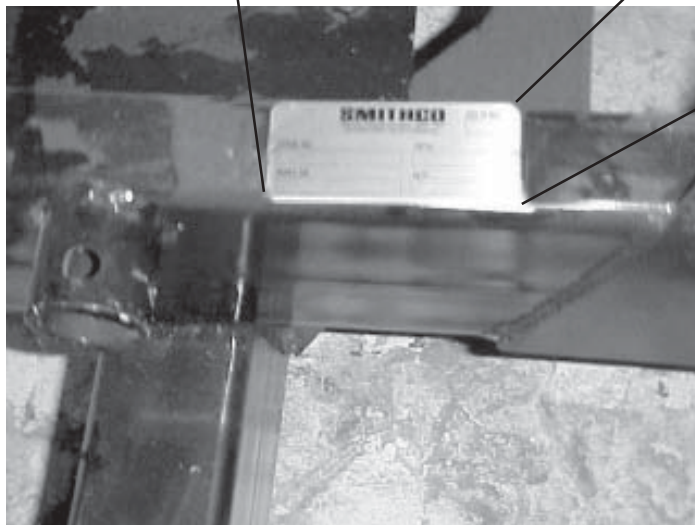
Read this manual and all other manuals pertaining to the Big Vac carefully as they contain safety, operating, assembly and maintenance instructions. Failure to do so could result in personal injury or equipment damage.

Keep manuals in a safe place after operator and maintenance personnel have read them. Right and left sides are from the operator's seat, facing forward.

All **SMITHCO** machines have a Serial Number and Model Number. Both numbers are needed when ordering parts. The serial number plate on the Big Vac is located on the front cross member of the frame.

For easy access record your Serial and Model numbers here.

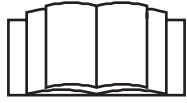
| | | |
|--|----------------------|----------------------|
| SMITHCO | | DATE OF MFG. |
| WAYNE, PENNSYLVANIA 19087 USA 610-688-4009 Fax 610-688-6069 | | <input type="text"/> |
| SERIAL NO. | kW/hp | |
| <input type="text"/> | <input type="text"/> | |
| MODEL NO. | kg/lb | |
| <input type="text"/> | <input type="text"/> | |



Information needed when ordering replacement parts:

1. Model Number of machine
2. Serial Number of machine
3. Name and Part Number of part
4. Quantity of parts

SYMBOLS



Read Operator's
Manual



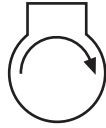
Electrical Power



No Electrical
Power



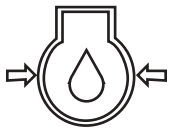
Engine - Stop



Engine - Start



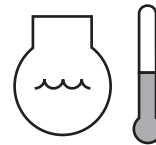
Engine - Run



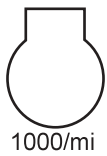
Engine Oil



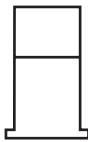
Temperature
Light



Water
Temperature



RPM



Gasoline



Diesel



Glow Plug - On



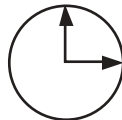
Glow Plug - Off



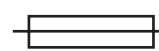
Glow Plug



Hour Meter



Hour Meter



Fuse



Hand Throttle



Choke - Closed



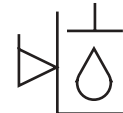
Choke - Open



Park Brake



Park Brake
Release



Hydraulic Oil
Level



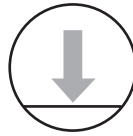
Off / Stop



On / Start



Up/Down Arrow



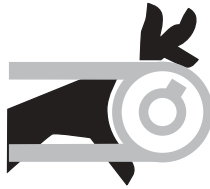
Down/Lower



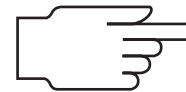
Up/Raise



No Smoking



Moving Parts



Manual Operation



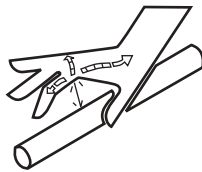
Pinch Point



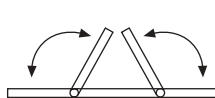
Step



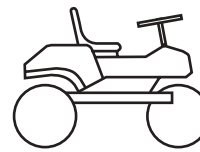
Hot Surface



Hydraulic Fluid Penetration



Lift Arm



Tractor



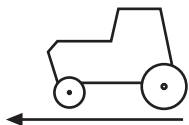
Engage



Disengage



PTO



Ground Speed



Fast



Slow

H

High

L

Low

F

Forward

R

Reverse

N

Neutral



Warning
Danger
Caution

SAFE PRACTICES

1. It is your responsibility to read this manual and all publications associated with this machine (engine, accessories and attachments).
2. Never allow anyone to operate or service the machine or its attachments without proper training and instructions. Never allow minors to operate any equipment.
3. Learn the proper use of the machine, the location and purpose of all the controls and gauges before you operate the equipment. Working with unfamiliar equipment can lead to accidents.
4. Wear all the necessary Personal Protective Equipment (PPE) on your head, eyes, ears, hands and feet. **Ear and eye protection are required.** Operate the machine only in daylight or in good artificial light.
5. Inspect the area where the equipment will be used. Beware of overhead obstructions and underground obstacles. Stay alert for hidden hazards.
6. Never operate equipment that is not in perfect working order or without decals, guards, shields, or other protective devices in place.
7. Never disconnect or bypass any switch.
8. Carbon monoxide in the exhaust fumes can be fatal when inhaled, never operate a machine without proper ventilation.
9. Never use your hands to search for oil leaks. Hydraulic fluid under pressure can penetrate the skin and cause serious injury.
10. This machine demands your attention. To prevent loss of control or tipping of the vehicle:
 - A. Use extra caution in backing up the vehicle. Ensure area is clear.
 - B. Do not stop or start suddenly on any slope.
 - C. Reduce speed on slopes and in sharp turns. Use caution when changing directions on slopes.
 - D. Stay alert for holes in the terrain and other hidden hazards.
 - E. Operate equipment up and down slopes, never across the face.
11. Before leaving operator's position for any reason:
 - A. Disengage all drives.
 - B. Lower all attachments to the ground.
 - C. Shut engine off and remove the ignition key.
12. Keep hands, feet and clothing away from moving parts. Wait for all movement to stop before you clean, adjust or service the machine.
13. The rubber fingers, sweeper and vacuum pick up and propel debris and small objects in the machines path during operation. Keep the area of operation clear of all bystanders.
14. Never carry passengers.
15. Use parts and materials supplied by SMITHCO only. Do not modify any function or part.
16. Avoid sharp turns. Watch the tires of the tractor while turning to make sure they do not contact the tongue of the Big Vac.
17. Shut down power source before attempting to unclog any part of the machine.
18. If reel deck and/or blower began to vibrate abnormally, immediately shut off power and determine the cause.

These machines are intended for professional maintenance on golf courses, sports turf, and any other area maintained turf and related trails, paths and lots. No guaranty as to the suitability for any task is expressed or implied.

1. Always disengage the PTO, shut off engine and remove the keys before leaving the tractor seat.
2. Keep the tractor's master shield in place at all times.
3. Missing or damaged shielding is the main reason for driveline entanglement. **Keep All Guards** on and in good condition. Check guards frequently.
4. **Never** step across a rotating powershaft. Always walk around the revolving shaft even if guards are in place.
5. Dress for safety. Do not wear loose fitting clothes or jewelry and keep long hair covered or pulled back.
6. The tractor drawbar should be adjusted to the length specified in the driven machine's manual. This will help prevent driveline stress and separation on uneven terrain and in tight turns.
7. A PTO shaft may break or separate during operation if improperly installed or adjusted. Be sure PTO shaft is installed properly.
8. Never perform maintenance or adjustments until both the driveline and the machinery have stopped moving.
9. Warn anyone who might come near an operating PTO about the entanglement hazard.
10. Regularly test driveline guards by spinning or rotating them to ensure they have not become stuck to the shaft.
11. Always use the driveline recommended for your machine. Never switch drivelines among different machines.
12. Reduce PTO shaft abuse by observing the following:
 - a. Avoid tight turns that pinch rotating shafts between the tractor and machine.
 - b. Keep excessive telescoping to a minimum.
 - c. Engage power to the shaft gradually.
 - d. Avoid over tightening of slip clutches on PTO driven machines.

SPECIFICATIONS FOR BIG VAC

WEIGHTS AND DIMENSIONS

| | |
|--------|-------------------|
| Length | 180" (458 cm) |
| Width | 84" (214 cm) |
| Height | 87" (221 cm) |
| Weight | 3500 lb (1588 kg) |

SOUND LEVEL

| | |
|--------------|--|
| At Ear Level | 92 dB (Use ear protection while operating) |
|--------------|--|

PTO SHAFT

| | |
|-------------|-----|
| Maximum RPM | 540 |
|-------------|-----|

TIRES & WHEELS

Two 26.5 - 1400 x 12 (18 psi (1.3 bar)) Fairway Type Turf Tires
Castor: 6 x 12 (20 psi (1.4 bar))

FLUID CAPACITY

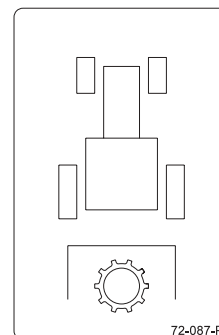
| | |
|--------------------------|---|
| Hydraulic Fluid | 10 gallon (37.85 liters) |
| Grade of Hydraulic Fluid | SAE 10W-40 API Service SJ or higher Motor Oil |

OPTIONAL EQUIPMENT

- 72-001 Combination Verticut and Sweeper Head
- 72-002 Rubber Finger Sweeper Head
- 72-245 2⁵/₁₆ Ball Hitch

The Big Vac arrives from **SMITHCO** with some setup required.

1. The PTO shaft and the rubber boot that goes around the blower and the reel need to be installed.
2. You will need a 40 HP (minimum) tow vehicle to remove the Big Vac from the trailer.
 - a. **Clevis Hitch** - You will need a $\frac{3}{4}$ diameter by 4" pin with some type of lock.
 - b. **Ball Hitch (optional)** - You will need a $2\frac{5}{16}$ " ball and a locking pin for the coupler.
3. Crank the jack on the Big Vac up so you can hook to tow vehicle.
4. Check the tire pressure. **Big Vac:** 18 psi (1.3 bar) **Castor Wheels:** 20 psi (1.4 bar).
5. Check hydraulic fluid level in tank. Look at the sight gauge on the front left side of the tank. The oil level should be at 90°C (194°F). If level is low, add SAE 10W-40 API Service SJ or higher motor oil.
6. Machine should be greased before starting. See Maintenance part of manual.
7. Lower reel all the way down. Place rubber boot onto the bottom of the blower housing. Raise the reel up $\frac{3}{4}$ of the way. Stretch rubber boot around lip on reel. Lift and lower several times to ensure boot is on properly.
8. When installing PTO shaft be sure the end with the **tractor decal (72-087)** goes to the tow vehicle. If PTO Shaft is put on wrong it will bust when engaged.
9. Read operating instructions before starting.



OVERLOADING DEBRIS HOPPER AND WEAR ON VACUUM HOUSING

OVERLOADING DEBRIS HOPPER

Smithco Sweeper-Vacs are designed to carry the following maximum loads:

| | |
|----------------------|--------------------|
| Model 72-000 Big Vac | 1500 lbs. (608 kg) |
|----------------------|--------------------|

PLEASE NOTE THE FOLLOWING:

1. Loads heavier than that will damage the unit.
2. Such damage is not covered by warranty.
3. Overloading is particularly easy when collecting aerifier cores.
4. The hoppers on the Big Vac and V62 are large in order to hold 7 and 4 cubic yards respectively, of thatch, grass clippings, leaves and trash.
5. They will not hold 7 or 4 cubic yards of aerifier cores.
6. The maximum depth (in the debris hopper) of aerifier cores is:

| | |
|----------------------|----------------|
| Model 72-000 Big Vac | 12 in. (30 cm) |
|----------------------|----------------|

VACUUM HOUSING WEAR

The Big Vac & V62 are fitted with a wear resistant liner in the vacuum housing. This will provide additional husing life. Be sure the following points are explained to the user:

1. The vacuum housing and impeller must be cleaned each time the unit is used so the housing liner is inspected daily. Only Smithco Sweeper-Vacs provide a clean out/inspection port for easy inspection and cleaning.
2. When bare steel is visible at any point in the housing lining, the lining must be replaced. It is expected the liner will wear and be replaced. It is a vast improvement over competitive units with no liners.
3. Replacement of the liner or the vacuum housing due ti wear is normal and is not covered by warranty.
4. Collection of aerifier cores causes extreme wear on the liner (and if unchecked, on the housing).
5. Caution users that, while Smithco Sweeper-Vacs do an excellent job collecting cores, the lining (and the housing) will wear quickly in such use.

RUBBERIZED BOOT

The rubberized boot between main unit and sweeper head is subject to wear and damage from debris. Unless defective, replacement of this boot is not covered by warranty.



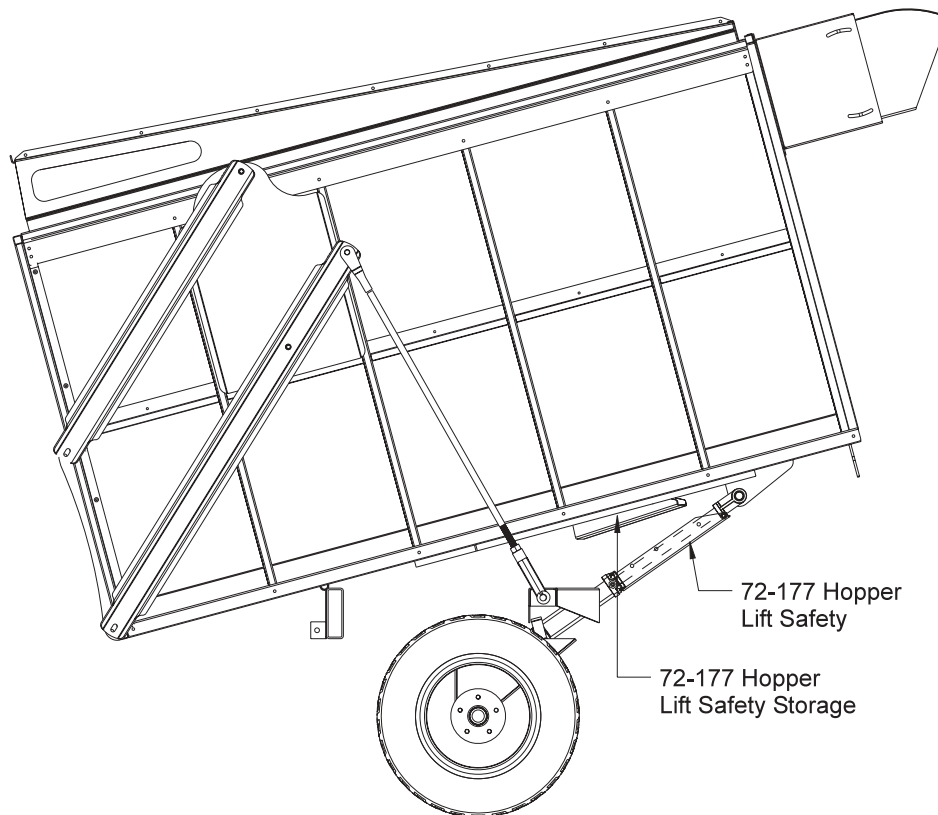
CONTROLS & INSTRUMENTS

- A. **Hopper Lever** - The hopper lever is used to lift and lower the hopper which also opens and closes the tailgate. Refer to decal for direction.
- B. **Finger Reel Off-On Valve** - Turns the reel on or off. Refer to decal for direction.
- C. **Deck Lift Lever** - The deck lift lever is used to raise and lower the reel. Refer to decal for direction.
- D. **Thatch Reel Off-On Valve** - Turns the reel on or off. Refer to decal for direction.



HOPPER LIFT SAFETY

The Hopper Lift Safety is used to support the ram on the hopper bottom in the extended position so you may service or repair the machine under the hopper. When not in use the Hopper Lift Safety can be stored on the hopper bed frame.



Before operating this machine, become familiar with all controls and functions of this unit and the tow vehicle. Also complete all maintenance requirements and read all safety warnings. By knowing both machines thoroughly, how it operates and by doing the prescribed maintenance steps, you can expect relatively trouble-free operation for years to come.

TOW VEHICLE

You will need a 40 HP minimum tow vehicle.

1. **Clevis Hitch** - You will need a $\frac{3}{4}$ " diameter by 4" pin with some type of lock.
2. **Ball Hitch** - You will need a $2\frac{5}{16}$ " ball and a locking pin for the coupler.

DAILY CHECKLIST

1. Check engine oil level in tow vehicle. Add as needed. **DO NOT OVERFILL.**
2. Tire pressure should be 18 psi (1.3 bar) on Big Vac tires and 20 psi (1.4 bar) on castor wheels.
3. Check hardware for loose or missing nuts, bolts, screws, etc., and tighten or replace as needed.
4. Inspect hydraulic lines for damage or leaks. Never use hands to inspect leaks.
5. Check hydraulic fluid level in tank. Look at the sight gauge on the front left side of the tank. The oil level should be at 90°C (194°F). If level is low, add SAE 10W-40 API Service SJ or higher motor oil.
6. Check controls for smooth, proper working operation. Lubricate as needed.
7. Check and clean all debris from blower housing.

ADJUSTMENT OF BELT TENSIONER

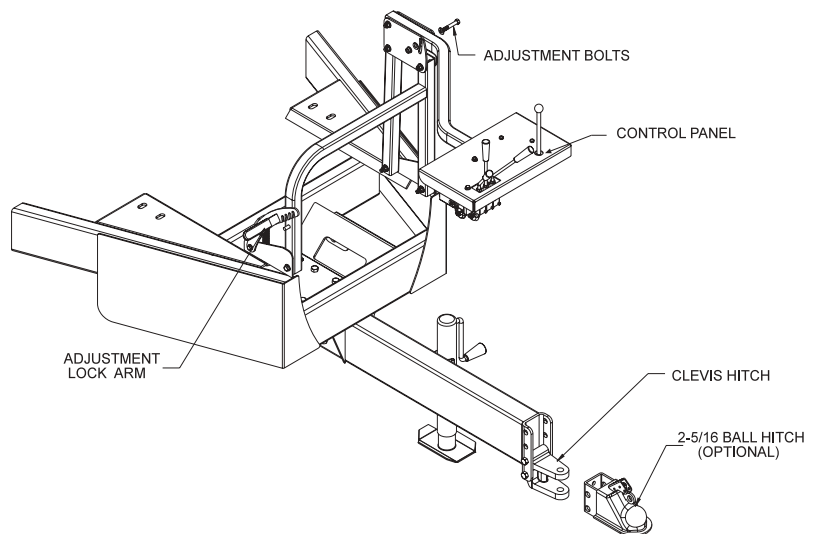
There are four maximum belt tensioners on the Big Vac. Two control the tension on the belts on the blower housing, one each on the finger reel and the thatcher reel. The proper tension of the idler should be 12 to 15 as per the gauge (A) on the side of the tightener. Over tightening the belt will shorten the life of the belt and the machine may not perform to the best of its ability. To adjust belt tensioner, loosen bolt holding tensioner. Bring idler pulley tight to belts and turn tensioner into belts to 15°. Tighten holder bolt.



A

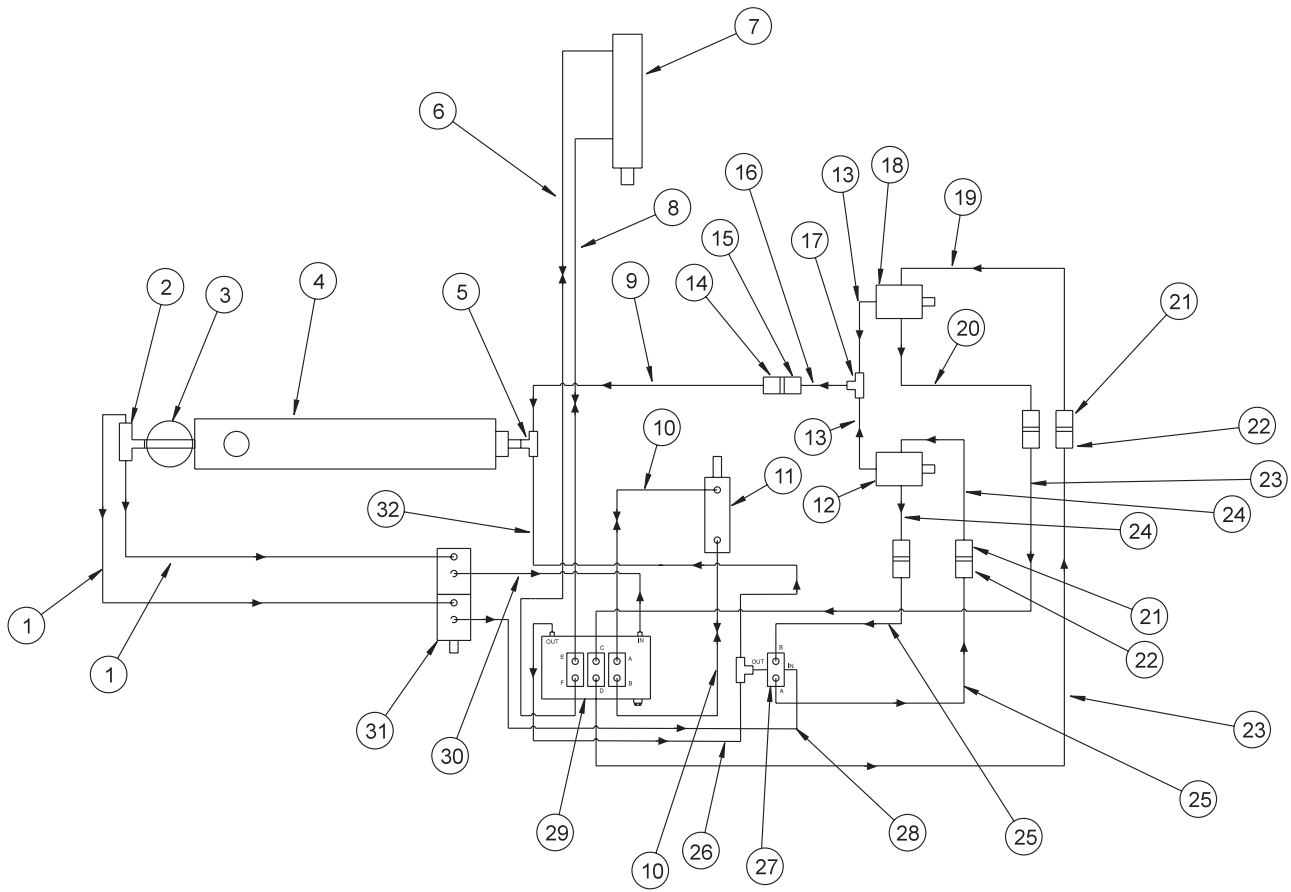
CONTROL PANEL ADJUSTMENT ARM

On the right hand side of machine is the adjustment lock arm, by lifting up you can adjust the control panel by moving it forward or rearward. Make certain that the lock arm is locked back in place after adjustment. For up and down adjustment loosen the four adjustment bolts place the control panel to where you want it and tighten the four bolts.



HITCH OPTIONS

You may use the clevis hitch that is shipped with your machine or a $2\frac{5}{16}$ " ball hitch that is an optional accessory. Both mount in the same location with three different bolt hole options.



HYDRAULIC PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------|---|----------|
| 1 | 72-079 | Suction Hose | 2 |
| 2 | 18-276 | Tee Fitting 1 ¹ / ₄ | 1 |
| 3 | 60-215 | Filter | 1 |
| | 60-334 | Filter Element (replacement only) | 1 |
| 4 | 72-096 | Hydraulic Tank | 1 |
| 5 | 34-058 | Swivel Tee | 1 |
| 6 | 72-065 | Hydraulic Hose | 1 |
| 7 | 72-040 | Cylinder | 1 |
| | 72-040-01 | Seal Kit | 1 |
| | 72-040-02 | Pin with Clips (part of 72-040) | 2 |
| 8 | 72-064 | Hydraulic Hose | 1 |
| 9 | 72-070 | Hydraulic Hose | 1 |
| 10 | 72-071 | Hydraulic Hose | 2 |
| 11 | 10-187 | Hydraulic Cylinder | 1 |
| | 14-273 | Seal Kit | 1 |
| 12* | 72-022 | Hydraulic Motor (Thatch Reel) | 1 |
| | 78-219-01 | Seal Kit | 1 |
| | 78-219-02 | Drive Coupler | 1 |
| 13 | 72-073 | Hydraulic Hose | 2 |
| 14 | 72-044 | Quick Coupler ³ / ₈ Male End | 1 |
| 15 | 72-045 | Quick Coupler ³ / ₈ Female End | 1 |
| 16 | 72-072 | Hydraulic Hose | 1 |
| 17 | 18-170 | Tee Fitting | 1 |
| 18* | 78-219 | Hydraulic Motor (Reel) | 1 |
| | 78-219-01 | Seal Kit | 1 |
| | 78-219-02 | Drive Coupler | 1 |
| 19 | 72-075 | Hydraulic Hose | 1 |
| 20 | 72-074 | Hydraulic Hose | 1 |
| 21 | 72-043 | Quick Coupler ¹ / ₂ Male End | 4 |
| 22 | 72-046 | Quick Coupler ¹ / ₂ Female End | 4 |
| | HRR-150 | Retaining Ring 1 ¹ / ₂ " External | 8 |
| 23 | 72-068 | Hydraulic Hose | 2 |
| 24 | 72-074 | Hydraulic Hose | 2 |
| 25 | 72-067 | Hydraulic Hose | 2 |
| 26 | 72-063 | Hydraulic Hose | 1 |
| 27 | 33-066 | Hydraulic Valve | 1 |
| 28 | 72-069 | Hydraulic Hose | 1 |
| 29 | 78-416 | Hydraulic 3 Bank Valve | 1 |
| 30 | 72-062 | Hydraulic Hose | 1 |
| 31* | 72-021 | Hydraulic Pump (Double Pump) | 1 |
| | 72-021-01 | Seal Kit | 1 |
| 32 | 72-066 | Hydraulic Hose | 1 |

* No other parts are replaceable for hydraulic motor or pump.

HYDRAULIC PRESSURES

Pump Displacement

FRONT

.90 in³/rev

REAR

.40 in³/rev

Pump Input Speed (up to)

4000 rpm

4000 rpm

Max. Operating Pressure

3600 psi

3600 psi

Max. Inlet Vacuum

10 in. Hg

10 in. Hg

Max. Case Pressure

80 psi

80 psi

EC DECLARATION OF CONFORMITY

according to Directive 89/392/EEC

We

SMITHCO INC.

(Name of supplier)

34 West Ave. Wayne, PA 19087 USA

(Full address of the manufacture - authorized representative established in the Community must also give the business name and address of the manufacture)

declare under our sole responsibility, that the product

Big Vac / 72-000-A

(Make, Model)

to which this declaration relates corresponds to the relevant basic safety and health requirements of the Directive 89/392/EEC,

(if applicable)

and to the requirements of the other Directives:

EN292-1

EN292-2

EN294

EN349

92/59

89/392

(Title and/or number and date of issue of the other Directives)

(if applicable)

For the relevant implementation of the safety and health requirements mentioned in the Directives, the following standard(s) and/or technical specification(s) has (have) been respected:

ISO 37-1983

PREN 836

ISO 1219-1976

SAE HS-2800

SAE J1362

(Title and/or number and date of issue of standard(s) and/or technical specification(s))

Cameron, Wisconsin USA

March 19, 1995

(Place and date of issue)



(Name, function and signature of the authorized person)

LIMITED WARRANTY

SMITHCO warrants this product to be free from defects in material and workmanship under normal use for one year from the date of purchase by the original user. (60 days if product is used for rental purposes.) All warranty claims must be handled through a SMITHCO authorized dealer or by SMITHCO, INC. All transportation charges must be paid by the purchaser.

There is no further express warranty. All implied warranties, including those of merchantability and fitness for a particular purpose, are limited to one year, (60 days if product is used for rental purposes) from the date of purchase by the original user, and to the extent permitted by law any and all implied warranties are excluded and disclaimed after the expiration of such period.

All incidental and consequential damages, including pickup and delivery of the unit, communication, mileage charges and/or rental of a replacement unit during repair, are not covered under this warranty, nor is any loss of income and/or other loss resulting from the failure of the product to function due to a warranty defect.

The following items are not covered under the SMITHCO warranty, and are warranted by their respective manufacturer.

- (a) Engine and engine parts, including starters, generators, alternators and filters.
- (b) Transaxle, differentials, gear boxes and mechanical pumps.
- (c) Hydrostatic transmissions, hydraulic pumps and motors.
- (d) Batteries.
- (e) Wheels and tires.

A copy of the warranty for the above items is furnished if necessary with each SMITHCO product.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which may vary from state to state.

Federal law now requires disclosure of the warranty which applies to this product prior to the sale to a customer. Please leave this statement attached to the product and allow the buyer to remove it after purchase.

SMITHCO

Wayne, Pennsylvania 19087

